

FRIDLEY NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT

FRIDLEY, MINNESOTA

Engineering Field Division/Activity: SOUTHDIV

Major Claimant: COMNAVSEASYSOM

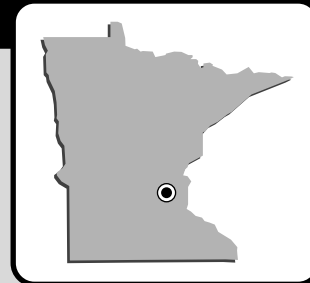
Size: 83 Acres

Funding to Date: \$14,217,000

Estimated Funding to Complete: \$38,190,000

Base Mission: Government-Owned Contractor-Operated (GOCO) facility that designs and manufactures advanced weapons systems

Contaminants: POLs, volatile organic compounds



Number of Sites:

CERCLA: 5
RCRA Corrective Action: 0
RCRA UST: 0
Total Sites: 5

Relative Risk Ranking of Sites:

High: 5
Medium: 0
Low: 0

Not Evaluated: 0
Response Complete: 0
Total Sites: 5

NPL

EXECUTIVE SUMMARY

The Fridley Naval Industrial Reserve Ordnance Plant (NIROP) covers 83 acres in an industrial, commercial and residential area in Fridley, Anoka County, Minnesota. The Mississippi River is one-quarter mile to the west. The northern portion of Fridley NIROP is a Government-Owned / Contractor Operated (GOCO) facility. The operator is a private company, the United Defense LP. The remainder of the facility, a 50 acre site bordering on the south, is independently owned by United Defense. The Fridley NIROP plant has produced advanced weapons systems since it was constructed in 1940. Typical industrial operations contributed to the contaminated soil and groundwater at the facility. Site types at the installation include: waste disposal trenches, old sanitary sewer lines, a foundry core butt disposal area and the plant-wide groundwater drainage system. Primary wastes and contaminants associated with these site types include petroleum products, solvents, plating sludge, construction debris, foundry sands and solvents, including acetone, organic solvents, dichloroethylene (DCE), trichloroethylene (TCE), methylene chloride, and heavy metal wastes. Current operations include pollution prevention technologies to prevent further contamination. The driving factor for placing Fridley NIROP on the National Priorities List (NPL) was TCE contamination of the plant-wide groundwater drainage system. A Federal Facility Agreement (FFA) between the Department of the Navy, EPA and the State of Minnesota was signed on 23 March 1991.

Since the soils occurring at the NIROP are highly permeable practically all the precipitation which falls on the ground surface either soaks into the ground or evaporates. Underlying the soils, the potable water in aquifers is susceptible to contamination. There are four aquifers which lie under the NIROP facility. Although there is a small potential for migration of surface water off the facility, there is a concern about the public park adjacent to the property. The major concern for contamination migration from the NIROP facility is in the groundwater. The plant-wide groundwater drainage system migrates into the aquifers, which discharge into the Mississippi River, which supplies the potable water for Minneapolis. The water supply intake for Minneapolis is located approximately one mile downstream from NIROP

Fridley. There is no potential threat to the ecosystems or endangered species in the area.

The Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in April 1995. The original Community Relations Plan (CRP), finalized in 1991, is currently being updated and expected to be completed in FY96. In FY95, the Administrative Record was compiled and an Information Repository was established at the NIROP plant office.

An Installation Assessment Study (IAS), equivalent to Preliminary Assessment (PA), was completed for four sites (Sites 1-4) in FY83. Groundwater investigations conducted between FY83 and FY88, identified trichloroethene (TCE) contamination in the groundwater. The fifth and final site at Fridley, established with a Remedial Investigation and Feasibility Study (RI/FS) in FY91, is Site 5, the plant-wide groundwater. Remedial Design (RD) was started for Site 5 in FY95 and will be complete in FY96. RD for the other sites is scheduled to begin between FY98 and FY03 and be complete in FY05. Remedial Action (RA) for the groundwater (Site 5) will begin in FY97 and be complete in FY98. Cleanup, except for Long-Term Monitoring (LTM), will be complete following the RA phase. LTM of the new groundwater treatment plant for the facility will continue for 20 years after implementation, through FY17.

The five sites have been divided into three Operable Units (OUs). OU 1, consists of Site 5, covers plant-wide groundwater. OU 2, made up of Sites 1, 2 and 4, covers all source areas outside the plant buildings. OU 3, which consists of Site 3, is the source areas beneath the factory building.

Currently, the overriding site of interest at Fridley NIROP is Site 5 (Plant Wide Groundwater). This site is not a single point site, but the groundwater drainage system for the entire installation. The interest in this site comes from the fact that the discharge from this site enters the Mississippi River 2,000 feet upstream of Minneapolis' drinking water plant. The contamination plume discovered on this site has been contained. Initial containment was from a pump-and-treat system. A Record of Decision (ROD) was signed in September 1990 for a selected RA which will provide hydraulic containment and recovery of all future migration of contaminated groundwater. The ROD for Site 5 is to be implemented in two phases. Phase one is in place, waste groundwater is being discharged into the public water treatment plant. Phase two will be the installation of an on-site National Pollutant Discharge Elimination System (NPDES) treatment system which will allow the treated waste water to be safely discharged directly into the Mississippi River. RI/FS activities are complete for the groundwater site and NPDES will begin design in FY96 and is expected to be complete and functioning in FY97.

Current Status Of Sites

■ Studies Underway	5
■ Cleanups Underway	0
□ Response Complete	0
TOTALS	5

100%

FRIDLEY NIROP RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - The NIROP is located one-quarter mile east of the Mississippi River on a broad, flat out wash terrace. The installation occupies 82.61 acres, most of which are covered with buildings or pavement. The soils occurring at the installation consist of unconsolidated deposits of highly permeable, stratified sand and gravel sands, conducive to the downward migration of contaminants. Practically all the precipitation which falls on the ground surface either soaks into the ground or evaporates. There is essentially no runoff due to flat topography and highly permeable soils. Precipitation flows to the water table quickly then through the upper aquifer into the Mississippi River. Underlying these sands, the potable water in aquifers is susceptible to contamination. There are four aquifers which lie under the NIROP facility. Two of these are confined aquifers and neither is used as a water supply for the area. The other two, the Prairie du Chien/Jordan aquifer and the Quaternary aquifer, are of concern. The Quaternary is more shallow and more easily contaminated and is seldom used as a source of water supply. The deeper aquifer supplies the city of Fridley's well but is only used as a summer demand well.



NATURAL RESOURCES - Although there is a small potential for migration of surface water off the facility, where there is a public park adjacent to the property, between the plant and the river, the major concern for contamination migration from the NIROP facility is in the groundwater. The plant-wide drainage system enters the groundwater aquifers and discharge into the Mississippi River, which supplies the potable water for Minneapolis. The water supply intake for Minneapolis is located approximately one mile downstream from NIROP Fridley. There is no potential threat to ecosystems or endangered species in the area.



RISK - A Baseline Human Health Risk Assessment (HHRA), based on EPA guidance, was performed for OU 2 (Sites 1, 2 and 4) in September 1993. The HHRA was found the human health risk was within the permissible range for current land usage. The land would not be appropriate for future residential use. An HHRA for Site 3 is planned for FY97.

The Navy completed a Relative Risk Ranking for the installation in FY95. All five of the Fridley sites received a "high" risk ranking. The four sites which are concerned with the base-wide soils (Sites 1, 2, 3 and 4) received a high risk for soil. The majority of the land at the Fridley area is covered by buildings. Three of the soil sites (Site 1, 2 and 4) are disposal trenches in the area between factory buildings, where drums and hazardous wastes have been buried. The fourth soil site (Site 3) is the area beneath the factory building, where cleaning solvents, metal and oils are suspected. The fifth site (Site 5) covers all the groundwater on the Navy property. The reason for the high groundwater ranking is a contaminated plume reaching from the property line to the Mississippi River, near the intake of the potable water for the city of Minneapolis.

The Agency for Toxic Substance and Disease Register (ATSDR) conducted a public health assessment and released its health consultation findings in May 1995. The findings are that the release of treated groundwater (after construction of the water treatment plant) is expected to have no impact on human health.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Based on an HRS score of 30.83, the installation was proposed for the National Priorities List (NPL) in July 1989 and listed in November 1989. The driving factor for placing Fridley NIROP on the NPL was TCE contamination of the plant-wide groundwater drainage system which emptied into the Mississippi River upstream from Minneapolis' drinking water plant. The contamination plume has since been contained. Initial containment was through a pump-and-treat system, but the groundwater from Fridley is no longer being pre-treated, it is now discharged directly into a publicly owned sewage plant. As a long term solution, design of a water treatment plant will start in FY96 and is scheduled for completion in FY97. Upon completion, the water will be safe to discharge directly into the river.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) between the Department of the Navy, EPA, and the State of Minnesota was signed on 23 March 1991. A Site Management Plan (SMP) is now under development. The FFA will not need to be re-negotiated once the SMP is complete and in use.



PARTNERING - There is not a formal partnering agreement in place, but the Navy personnel, Federal and State regulators maintain open communications through twice monthly scheduled conference calls.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARDS - The Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in April 1995. The members of the original TRC included EPA Region V; Southern Division, Naval Facilities Engineering Command; Minnesota Pollution Control Agency; US Army Corps of Engineers, Omaha District; County of Anoka; City of Fridley; United Defense, MWCC; and NIROP Fridley. Members of the TRC plus one additional community member make up the RAB. There has been very little community interest or involvement. A city of Fridley director was the only member of the community to join the RAB. The RAB meetings are held quarterly at the Fridley Municipal Center. There is a local government charter in place. To date, the RAB meeting agendas have consisted of introducing the team members and presenting them with Installation Restoration (IR) training so that they will soon be able to review work plans. The first work plan they will review is for a drum removal action and another for the new water treatment plant.



COMMUNITY RELATIONS PLAN - The original Community Relations Plan (CRP), finalized in 1991, is currently being updated and expected to be completed in FY96.



INFORMATION REPOSITORY - In FY95, the Administrative Record was compiled and an Information Repository established at the NIROP plant office to make the IR documents available for public viewing.

FRIDLEY NIROP HISTORICAL PROGRESS

FY83

Sites 1-4 - An Initial Assessment Study (IAS), equivalent to Preliminary Assessment (PA), was completed for four CERCLA sites.

Site 1 - Two Interim Remedial Actions (IRAs) were begun in FY83 and completed in FY84. One was for the removal of drums, the other for the removal of contaminated soils.

FY86

Sites 1, 2, and 4 - A Remedial Investigation/Feasibility Study (RI/FS) began.

FY88

Site 5 - RI/FS activities for groundwater cleanup were started.

FY90

Sites 1 and 2 - An IRA, for a groundwater extraction and treatment system began operation. The treatment system will operate until FY99.

Site 5 - A Record of Decision (ROD) was signed in September 1990 for a selected Remedial Action (RA) which will provide hydraulic containment and recovery of all future migration of contaminated groundwater.

FY91

Site 2 - Two IRAs started and were completed in FY92. One was for the removal of drums, the other for the removal of contaminated soils.

FY92

Sites 1, 2 and 4 - Remedial Investigation (RI) activities for plant-wide soil contamination were initiated.

FY93

Sites 1, 2 and 4 - RI activities for soil contamination were complete and plant-wide FS activities for soils were started.

Site 5 - In order to minimize the risk to human health and the environment, a pump-and-treat of runoff at (Site 5) was performed to reduce a plume, before runoff was diverted to the public sewer system. It was installed as part of an IRA in FY93 and will run through FY97, or until the new base sewer treatment system is operational.

FY94

Sites 1, 2 and 4 - Completed FS activities for soils.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 1, 2, 4 and 5 - A Baseline for Risk Assessment for Human Health was performed.

Site 1 - Storage drums, which were thought to be a source of TCE contamination, were removed. Subsequently, the real source of the TCE

was found to be a non-point source originating at gravel lined pits associated with the plant building.

Site 5 - Remedial Design (RD) for the plant-based water treatment plant was begun.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Site 5 - RD for the water treatment plant will be finished and an RA (construction of the treatment plant) will begin.

FY97

Site 5 - The RA phase will start in FY97 and will be completed in FY98. The water treatment plant under construction on the Fridley facility will be complete and functioning; operation of the new treatment plant and monitoring of its discharge will continue through FY17.

Sites 1-4 - A ROD will be signed for the restoration of all soil sites in FY99. The RD phase for the soil restoration project should begin in FY00 and the RA phase will begin in FY01. Ten years of LTM will follow completion of the RA phase at Site 3, the area beneath the NIROP main industrial building.

FRIDLEY NIROP PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	4							
SI								
RI/FS	1		3			1		
RD			1			1	1	2
RA					1	1		3
IRA	2(4)			1(1)		2(2)		
RC						1		4
Cumulative Response Complete						20%		100%